



COMMONWEALTH of VIRGINIA

DEPARTMENT OF TRANSPORTATION

731 Harrison Ave., P.O. Box 3071
Salem, VA 24153-0560

CHARLES A. KILPATRICK, P.E.
COMMISSIONER

May 6, 2014

Ms. Tara Pattisall
Roanoke County Community Development Department
P.O. Box 29800
Roanoke, VA 24018

RE: SUP-C1
Roanoke County
Corporate Property Services, Inc (Chick-Fil-A)
Proposed Land Use – Restaurant with drive-thru
Route 460, Challenger Avenue
3rd Submittal TIA w/ Supplement

Dear Ms. Pattisall,

We have reviewed the above mentioned special use request and have the following comments:

1. See previous letter for general rezoning/conceptual plan comments.

Traffic Impact Analysis Comments:

1. In the Synchro files, the grade for the northbound approach of West Ruritan Road at the Chick-fil-A entrance is 0 for all scenarios while the grade for the southbound approach of West Ruritan Road at the Chick-fil-A entrance and Route 460 is -8 (8% downgrade). Double check. There should be an 8% upgrade on West Ruritan Road northbound approach at the Chick-fil-A entrance. This will have an impact on the results, but may not have any appreciable effect on operations.
2. Table 9.2 has several errors and omissions in the report. Please double check.
3. Page 36 – "...as detailed in Section 7.6 of the VDOT *Traffic Operations Analysis Tool Guidebook*, Version 1.0." Please edit this text to indicate Version 1.1 which was updated on August 2013.
4. Table 10.2 – the queues are missing for the westbound through approach of Route 460 at West Ruritan Road for the December 2014 build out AM peak hour. Please revise the table.
5. Page 41 – "...the outside lane bocks the right turn lane and..." has a typo.
6. In the previous comment #5, the signalized intersections need to be coordinated and the cycle lengths, splits and offset optimized. This was not provided for the 2014 build out conditions and 2020 design conditions, with and without the modified West Ruritan Road. Provide them in the next submission or explain.

The following additional comments refer to the first submittal of a supplement to the original traffic impact analysis for two options suggested during the April 1, 2014 Planning Commission Public Hearing. Option 1 limits the egress movements to right-out only and appears to be the preferred alternative if the special use permit is approved to move forward to the development plan review. However, Option 2 limits the only access to Trail Drive. Based upon comments in the supplement, this does not appear to be a feasible option for the developer moving forward. The Department recommends removal of the data and only a brief discussion included if this is the case.

1. For the figures with left turns prohibited out of the site, the trip distribution is incorrect for the peak hours. It shows 5% exiting Chick-fil-A to Route 460 then utilizing Trail Drive. It should show 5% which would be left turns out of the site accessing their destinations through the Cleaner World property and accessing Trail Drive. Revise. This will have a slight impact on the operations along Route 460 and West Ruritan Road.
2. Table 2.1 – for the build out conditions with no left turn lane out of Chick-fil-A, the southbound approach of West Ruritan Road at Route 460 has the delays reported for the through movements and not the left turn movements when the lane is a shared left-through lane. The southbound through volumes are sometimes reported as 0 but the table shows delays for the southbound through approach. Please double check.
3. Table 2.1 – please double check the delays and LOS for the West Ruritan Road and Chick-fil-A intersection. It seems that the delays and LOS from the 2020 design year conditions were reported for the 2014 build out conditions and the analysis was not included for the 2014 build out conditions. Please include the 2014 build out condition analysis in the next submission.
4. Table 2.1 – please double check the delays for the right turn movement at the westbound approach of Route 460 and West Ruritan Road and also the left-through movement at the southbound approach of the intersection for the 2020 PM design conditions with no left turns out of Chick-fil-A.
5. Table 2.2 – for the 2020 design year conditions, it is confusing how the 3 feet queue past the proposed Chick-fil-A entrance is assigned for the southbound approach of West Ruritan Road at the intersection with US 460 for the PM peak hour. It seems like the queue is assigned to the right turn lane. Explain.
6. Maximize the full width storage available for the southbound right turn lane while ensuring physical separation between the commercial entrance and the start of the taper for the right turn lane.
7. Figure 2.16 – the number of peak hour trips at the intersection of Route 460 westbound and Blue Hills Village Drive do not add up to the number of trips turning right from Trail Drive to Route 460 for all peak hours. Double check. These need to match the trip distribution as mentioned in Figures 2.13 through 2.15. Please note that this will probably have a significant impact on the analysis.
8. The December 2014 build out volumes and 2020 design year volumes for Option 2 in the supplement need to be consistent with the build out volumes as stated in the original TIA analysis. There are a few approaches with volumes that seem off. Double check.
9. The Synchro outputs in tabular format are not provided for Option 2 to compare to Option 1. Please include these in the next submission for the purposes of comparison to Option 1 or document that Option 2 is no longer being pursued.
10. In the Synchro models for Trail Drive access (Option 2), there needs to be some median spacing on Route 460 at the Blue Hills Village Drive intersection. Without the median

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spacing, it will be difficult for vehicles to successfully negotiate U-turns on Route 460 at the Blue Hills Village Drive intersection.

11. Page 35 – "...a right turn lane is warranted at the eastbound approach to the Trail Drive intersection." Should it be marked as westbound instead of eastbound?

Should you have any questions, please do not hesitate to call. Thank you.

Sincerely,

A handwritten signature in blue ink, appearing to read "B. K. Blevins", with a stylized flourish at the end.

Brian K. Blevins, P.E.
Area Land Use Engineer
VDOT, Salem District Transportation and Land Use

bkb/